

**REMARKS**

Claims 1-60 are pending in the application. Claims 1-60 stand rejected. Claims 1, 11-24, and 31 are being amended. No new matter is believed to be introduced by way of the amendments.

Claim 1 is being amended to correct the word "implication" for the word "amplification." No new matter is believed to be introduced by way of this amendment.

**Reply to Notice of Non-Compliant Amendment**

In response to Notice of Non-Compliant Amendment mailed on October 22, 2008, Applicants are submitting the requested reference, R. Chandran, Coded Domain Enhancement of Compressed Speech, Master's Thesis, University of Notre Dame, 1999, in a Supplemental Information Disclosure Statement filed concurrently herewith.

**Rejections Under 35 U.S.C. §112, Second Paragraph**

Claims 11-24 were rejected under 35 U.S.C. §112, second paragraph as being indefinite. Corrections to 11-24 have been made in the Claim Listing above. Accordingly, claims 11-24 are believed to have overcome the rejection under 35 U.S.C. §112, second paragraph. Therefore, Applicants respectfully request withdrawal of the rejections.

**Rejections under 35 U.S.C. §103(a)**

Claims 1-6, 10-11, 15, 24, 31-36, 38, 40-41, 45, and 54 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jarvinen *et al.* (U.S. Patent No. 5,946,651), hereinafter referenced as "Jarvinen" in view of Yajima *et al.* (U.S. Patent No. 5,873,058), hereinafter referenced as "Yajima," and further in view of Tackin *et al.* (U.S. Patent No. 7,092,365), hereinafter referenced as "Tackin,"

Claims 8, 9, 12, 16, 18, 20-23, 39, 42, 46, 48, and 50-53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jarvinen in view of Yajima, in view of Tackin, and further in view of Yasunaga *et al.* (U.S. Patent No. 6,330,534) ("Yasunaga").

Claims 7 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jarvinen in view of Yajima, in view of Tackin, in view of Yasunaga, and further in view of Crouse *et al.* (U.S. Patent No. 4,899,384), hereinafter referenced as "Crouse".

Claims 13-14, 17, 19, 43-44, 47, and 49 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jarvinen in view of Yajima, in view of Tackin, in view of Yasunaga, and further in view of Swaminathan *et al.* (Patent No. 5,751,903).

Claims 25-30 and 55-60 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yajima in view of Applicants' Admitted Prior Art (AAPA).

Claim 1 as amended in the Claim Listing above recites:

In a communications system for transmitting digital signals using a compression code comprising a predetermined plurality of parameters including a first parameter, said parameters representing an audio signal comprising a plurality of audio characteristics including a first characteristic, said first parameter being related to said first characteristic, said compression code being decodable by a plurality of decoding procedures including a first decoding procedure to decode said parameters related to said first characteristic, apparatus for adjusting the first characteristic comprising:

- a decoder responsive to said digital signals and said compression code to at least partially decode said digital signals to read at least said first parameter;

- a first generator to generate at least a first parameter value derived from said first parameter, and

- responsive to said digital signals and said first parameter value, a second generator to generate an adjusted first parameter value representing an adjustment of said first characteristic;

- a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value;

- a detection unit to detect over amplification or over suppression of said signals as a function of the gain value;

- responsive to detection of over amplification or over suppression, a feedback unit to feedback and further adjust said adjusted first parameter value;

- responsive to said adjusted first parameter value, a replacement unit to derive an adjusted first parameter;

- a replacement unit to replace said first parameter in said digital signals with said adjusted first parameter; and

- a transmitter to transmit said digital signals with said adjusted first parameter.

In the above amended language, the strikethrough words indicate elements being deleted by way of amendment, and the underlined words indicate elements being added by way of amendment. Support for this amendment can be found in the application, as originally filed, at least on page 27, second full paragraph, and also on Fig. 13.

In contrast to Applicants' amended Claim 1, Jarvinen merely employs a feed-forward loop to adjust intermediate excitation signals. Jarvinen does not disclose "a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value" and "a detection unit to detect over amplification or over suppression of said signals as a function of the gain value," as recited in Applicants' amended claim 1.

Yajima is being combined with Jarvinen because Jarvinen does not disclose adjusting a gain parameter over a network prior to reception at a receiver. However, Yajima merely describes a voice coding and transmission system with silence elimination that moderates the divergence rate by attenuating the gain value of a voice signal input to the unstable coding/decoding system, and provides an open-loop system for setting gain. Yajima does not employ "a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value" and "a detection unit to detect over amplification or over suppression of said signals as a function of the gain value," as recited in Applicants' amended claim 1.

Tackin is being combined with Jarvinen and Yajima because neither one of these references discloses a gain adjustment step wherein a detection of over or under amplification is performed and a feedback loop is utilized (page 6 of Office Action, paragraph bridging pages 6 and 7).

Page 7 of the present Office Action refers to Fig. 8A, column 22, line 7 to column 23, line 15 and column 15, lines 52-53 of Tackin and states that Tackin recites the comparison of a gain adjusted signal to a threshold means for detecting over and under amplification. Applicants respectfully disagree with this view. Tackin as described in column 22, line 7 to column 23, line 15, and shown in Fig. 8A merely employs estimates of long-term and short-term power levels to compare signals against a predetermined clipping threshold to detect over amplification. The clipping logic controls an automated gain control (AGC) bypass switch, which remains in the bypass position until the AGC adapts and amplitude of the gain adjusted signal falls below the

threshold. Tackin does not disclose or teach "a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value" and a detection unit to detect over amplification or over suppression of said signals as a function of the gain value," as recited in Applicants' amended claim 1.

A hypothetical system combining the teachings of Jarvinen, Yajima, and Tackin may include a feedback loop but it would not include "a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value" and "a detection unit to detect over amplification or over suppression of said signals as a function of the gain value," as recited in Applicants' amended claim 1.

Therefore, it is Applicants' position that Claim 1 is allowable over Jarvinen in view of Yajima, in view of Tackin. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of this claim be withdrawn.

Claim 31 includes similar elements as Claim 1 (calculating a gain value as a function of the first parameter value and the adjusted first parameter value and detecting over amplification or over suppression of said signals as a function of the gain value). Accordingly, Applicants respectfully submit that claim 31 overcomes the rejection under 35 U.S.C. § 103(a) for the reasons presented above.

Because claims 2-6, 10, 11, 15, 20 and 24 depend from now amended Claim 1 and claims 32-36, 38, 40, 41, 45, and 54 depend from amended Claim 31, Applicants respectfully submit that these claims should be allowed for at least the same reasons as the base claims from which they depend.

Yasunaga is being combined with Jarvinen, Yajima, and Tackin because neither one of these references discloses use of algebraic CELP coding standard or adjusting a gain factor applied to a speech parameter by quantizing an adjusted target speech parameter. However, Yasunaga does not teach "a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value" and "a detection unit to detect over amplification or over suppression of said signals as a function of the gain value," as required by Applicants' amended claim 1.

A hypothetical system combining the teachings of Jarvinen, Yajima, Tackin, and Yasunaga may use an algebraic CELP coding standard or adjust a gain factor applied to a speech

parameter by quantizing an adjusted target speech parameter, but it would not include “a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 8-9, 12, 16, 18, 20-23, 39, 42, 46, 48, and 50-53 be withdrawn.

Crouse is being combined with Jarvinen, Yajima, Tackin, and Yasunaga because neither one of these references discloses employing a maximum absolute value of a speech parameter to derive a speech scaling factor. However, Crouse does not teach “a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

A hypothetical system combining the teachings of Jarvinen, Yajima, Tackin, Yasunaga, and Crouse may employ a maximum absolute value of a speech parameter to derive a speech scaling factor, but it would not include “a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 7 and 37 be withdrawn.

Swaminathan is being combined with Jarvinen, Yajima, and Tackin because neither one of these references discloses the use of differential scalar quantization. However, Swaminathan does not teach “a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

A hypothetical system combining the teachings of Jarvinen, Yajima, Tackin, and Swaminathan may employ a differential scalar quantization, but it would not include “a gain calculation unit to calculate a gain value as a function of the first parameter value and the

adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 13-14, 17, 19, 43-44, 47, and 49 be withdrawn.

AAPA is being combined with Yajima because neither one of these references discloses a TFO GSM standard using a combination of coded speech and PCM bits. However, AAPA does not teach “a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

A hypothetical system combining the teachings of Yajima and AAPA may employ a TFO GSM standard using a combination of coded speech and PCM bits, but it would not include “a gain calculation unit to calculate a gain value as a function of the first parameter value and the adjusted first parameter value” and “a detection unit to detect over amplification or over suppression of said signals as a function of the gain value,” as required by Applicants’ amended claim 1.

Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 13-14, 17, 19, 43-44, 47, and 49 be withdrawn.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims, Claims 1-60, are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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